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AVERP3452US **PATENT**

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PATENT & TRADEMARK OFFICE

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: :

Bilodeau et al. : Group No: 1772

Serial No: 10/686,166 : Examiner: P. L. Nordmeyer

Filed: October 15, 2003 : Confirmation No: 9696

For: **COMPOSITE CONSTRUCTION CONTAINING BARRIER LAYER**

Mail Stop Appeal Brief Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

TRANSMITTAL OF APPEAL BRIEF (PATENT APPLICATION - 37 CFR 192)

1. Transmitted herewith is the APPEAL BRIEF in this application with respect to the Notice of Appeal filed on January 26, 2006 which bears a USPTO date stamp of January 30, 2006.

2. STATUS OF APPLICANT

This application is on behalf of

[X] other than a small entity
[ ] small entity

CERTIFICATE OF MAILING (37 CFR 1.8(a))

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being deposited with the United States Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to: Mail Stop Appeal Brief Patents, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Denise G. Bachtel
(Type or print name of person mailing paper)

Date: February 9, 2006

Denise G. Bachtel
(Signature of person mailing paper)

3. FEE FOR FILING APPEAL BRIEF

Pursuant to 37 CFR 1.17(f) the fee for filing the Appeal Brief is:

[ ]	small entity	$250.00
[X]	other than a small entity	$500.00

Appeal Brief fee due $ 500.00

4. EXTENSION OF TERM

The proceedings herein are for a patent application and the provisions of 37 CFR 1.136 apply.

(a) [ ] Applicant petitions for an extension of time under 37 CFR 1.17(a)-(d) for the total number of months checked below:

	Extension (months)	Fee for other than small entity	Fee for small entity
[ ]	one month	$ 120.00	$ 60.00
[ ]	two months	$ 450.00	$225.00
[ ]	three months	$ 1,020.00	$510.00
[ ]	four months	$ 1,590.00	$795.00

Fee $__________

If an additional extension of time is required please consider this a petition therefor.

[ ] An extension for __________ months has already been secured and the fee paid therefor of $__________ is deducted from the total fee due for the total months of extension now requested.

Extension fee due with this request $_________

or

(b) [X] Applicant believes that no extension of term is required. However, this conditional petition is being made to provide for the possibility that Applicant has inadvertently overlooked the need for a petition and fee for extension of time.

5. TOTAL FEE DUE

The total fee due is:

Appeal Brief fee $ 500.00

Extension fee (if any) $ ____

TOTAL FEE DUE $ 500.00

6. FEE PAYMENT

[X] Payment by credit card in the sum of $500.00. Form PTO-2038 is attached.

[ ] Charge Account No. ____ the sum of $ ____
A duplicate of this transmittal is attached.

7. FEE DEFICIENCY

[X] If any additional extension and/or fee is required, this is a request therefor and to charge Account No. 18-0988.

AND/OR

[X] If any additional fee for claims is required, charge Account No. 18-0988.

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Denise G. Bachtel
(Name)
Denise G. Bachtel
(Signature of person mailing)

February 9, 2006
(Date)

Docket AVERP3452US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF APPEALS

In re application of Bilodeau et al.	:	Group Art Unit: 1772
Serial No: 10/686,166	:	Examiner: P. L. Nordmeyer
Filed: October 15, 2003	:	Confirmation No: 9696

For: **COMPOSITE CONSTRUCTION CONTAINING BARRIER LAYER**

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APPLICANTS' BRIEF ON APPEAL

Dear Sir:

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This Appeal Brief is submitted in the above-identified application in response to the final Office Action mailed October 27, 2005. Appellants' Notice of Appeal was filed on January 30, 2006. Accordingly, Appellants' Appeal Brief is timely filed, with no extensions of time.

I. REAL PARTY IN INTEREST

The real party in interest is Avery Dennison Corporation, 150 North Orange Grove Boulevard, Pasadena, California 91103, the assignee of the above-captioned application.

II. RELATED APPEALS AND INTERFERENCES

Appellants are aware of no related appeals or interferences that will directly affect or be directly affected by or have a bearing on the Board's decision in the instant appeal.

III. STATUS OF CLAIMS

Claims 1-14 are pending in the application. Claims 1-14 are finally rejected and are the subject of the present Appeal. The claims on appeal are reproduced in the attached APPENDIX.

IV. STATUS OF AMENDMENTS

No amendment under 37 C.F.R. 1.116 was filed. Thus at the present time, there is no amendment pending.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

The present invention is directed to labels and tapes that are particularly useful for rubber-based substrates, such as vehicular tires (page 1, lines 8-9). The labels and/or tapes are composite constructions comprised of a first substrate, an adhesive layer, and a radiation-cured cross linked acrylated epoxy barrier layer, the barrier layer being positioned between the first substrate and the adhesive layer (page 2, lines 2-12).

The first substrate may be a polymer film, paper, or a combination thereof (page 4, lines 14-15). The barrier layer is substantially impervious to migratory components in the first substrate and maintains its barrier properties under heat stress (page 13, lines 24-33).

In one embodiment, the first substrate comprises a polyvinylidene chloride film containing migratory additives, such as plasticizers and antioxidants (page 5, lines 17-19, Example 1).

The barrier layer comprises a radiation cured acrylated epoxy derived from at least one acrylated epoxy oligomer and at least one reactive diluent selected from N-vinyl-2-pyrrolidone and N-vinylcaprolactam. In one embodiment, the barrier layer further comprises at least one photoinitiator (page 13, lines 16-20). The barrier layer may also comprise a wax, a surfactant, or a combination thereof (page 14, line 31 to page 15, line 2).

The composite construction of the invention can be adhered to a second substrate, such as a rubber-based substrate. The rubber-based substrate may contain any of the rubber compounding additives known in the art, including accelerators, retarders, reinforcing agents and fillers, softeners and extenders, plasticizers or peptizers, vulcanization agents, antioxidants and stabilizers. Many of these additives tend to migrate from the rubber-based second substrate to the first substrate. The barrier layer of the composite of the present invention is impervious or substantially impervious to the migratory material or components typically used in the rubber-based second substrate (page 17, lines 8-31).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

A. Claims 1-14 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Bilodeau (US 6,235,363) in view of Weeks (US 5,763,122) and Aoyama et al. (US 4,713,296).

VII. ARGUMENT

A. Claims 1-14 would not have been obvious based on Bilodeau U.S. 6,235,363 in view of Weeks U.S. 5,763,122 and Aoyama et al. U.S. 4,713,296.

The Examiner's Rejection:

Bilodeau '363 discloses a composite construction for use as a label or tape that is adhered to a second substrate comprising a first substrate which may be comprised of a polymer film of polyvinyl chloride (column 13, lines 20-23) wherein the first substrate has a faceside and an underside opposite the said faceside, an adhesive layer, and a barrier layer adhered to the underside of said first substrate and positioned between the first substrate and the adhesive layer. The Examiner has stated that the barrier layer is cured using ultraviolet light and comprises a wax, surfactant or a combination thereof. Also, the adhesive layer is comprised of a pressure sensitive adhesive of an acrylate or methacrylate, and Bilodeau discloses the use of 10-30% by weight of N-vinyl-2-pyrrolidone or N-vinyl caprolactam as part of the adhesive layer.

The Examiner acknowledges

> Bilodeau fails to disclose the barrier layer comprising a radiation cured acrylic epoxy derived from at least 65-90% of one acrylated epoxy oligomer and 1-10% by weight of at least one photoinitiator, wherein the barrier layer is substantially impervious to migratory components of said first substrate, and at least one reactive diluent selected from N-vinyl-2-pyrrolidone and N-vinyl caprolactam and about 10-30% by weight (page 3).

Weeks is relied upon by the Examiner for teaching a barrier layer comprising a radiation cured acrylated epoxy derived from at least one acrylated epoxy oligomer that is derived from polycaprolactone hexol and 0-10% by weight of at least one photoinitiator, wherein the barrier layer is substantially impervious to migratory components of said first substrate. The barrier layer is utilized for the purpose of preventing interaction between the color layer and the adhesive while improving the developability of the non-image areas.

The Examiner has stated that Aoyama et al teach the use of N-vinyl-2-pyrrolidone (column 10, lines 30-35) at a concentration of about 10-30% by weight as part of a barrier layer to form a laminate that is superior to gas properties.

Based on the above references, the Examiner has concluded that it would have been obvious to one of ordinary skill in the art at the time the Appellants' invention was made to have provided a barrier layer having the desired composition in Bilodeau in order to prevent interaction between the color layer and the adhesive while improving the developability of the non-image areas as taught by Weeks and to form a laminate with a gas barrier that is superior in gas barrier properties as taught by Aoyama et al.

Appellants' Response and Remarks:

The Examiner has failed to establish a prima facie case of obviousness and the rejection is therefore improper. Under *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), as codified in MPEP §706.02, in order to establish a prima facie case of obviousness the Patent Office must:

(1) set forth the differences in the claim over the applied references;
(2) set forth the proposed modification of the references which would be necessary to arrive at the claimed subject matter; and
(3) explain why the proposed modifications would be obvious.

To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation to modify the reference. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure. MPEP §706.02(j), *In re Vaek*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

In the case at hand, the Examiner has failed to explain why one skilled in the art, at the time the invention was made, would have been motivated to modify the composite construction of Bilodeau by substituting the acrylated epoxy of Weeks for the cycloalophatic epoxy of Bilodeau and further, substituting the N-vinyl-2-pyrrolidone of the saponification product of N-vinyl-2-pyrrolidone-ethylene-vinyl acetate copolymer of Aoyama for the polyol of Bilodeau.

As acknowledged by the Examiner, Bilodeau '363 does not teach a barrier layer which comprises a radiation cured acrylated epoxy derived from at least one acrylated epoxy oligomer and at least one reactive diluent selected from N-vinyl-2-pyrrolidone (NVP) or N-vinyl caprolactone (NVC). The secondary references also fail to teach this composition as a barrier layer.

Bilodeau '363 discloses a barrier layer containing a radiation cured cross liked cycloaliphatic epoxide derived from at least one cycloaliphatic epoxy compound and at least one polyol. It is respectfully submitted that there is no teaching or suggestion in the secondary references which would have made it obvious to one skilled in the art to modify the polymer utilized in the barrier layer by Bilodeau '363 in a manner which would result in the use of the cured acrylated epoxy described in the claims of the present application.

Weeks is directed to color proofing systems wherein sets of single sheet color proofing elements are laminated together to form a single color proof composite. Each color proofing element contains, in order, a releasable carrier, a photosensitive color layer, an optional barrier layer and a thermally activated colorless adhesive (col. 3, lines 49-53). The barrier layer is used to prevent interaction between the photosensitive color layer and the thermally activated adhesive layer, and to improve developability of the non-image areas of the color layer (col. 8, lines 25-28). The color layer may be either positive acting or negative acting. If the color layer is a negative acting system, such as those based on a photosensitive polymer diazonium salt or a photopolymerizable multi-functional (meth)acrylate (col. 5, line 56 to col. 6, line 5), the barrier layer comprises a photopolymerizable ethylenically unsaturated compound, an acid binder and a photoinitiator. The ethylenically unsaturated compound may be an acrylated epoxy oligomer or an acrylated urethane oligomer (col. 8, lines 30-47).

Aoyama et al. teach that EVOH has good gas barrier properties when used in laminate constructions, but has processing disadvantages in that it easily suffers cracking and uneven stretching (col. 1, lines 43-55). Thus the EVOH needs to be modified with another component to improve processability of the laminate. The component used to modify the EVOH to improve processability, however, must not interfere with the gas barrier properties of the EVOH. Aoyama et al. disclose that when a saponification product of an N-vinyl-2-pyrrolidone-ethylene-vinyl acetate copolymer is used in the laminate structure, the laminate exhibits good formability and gas barrier properties (col. 2, lines 22-32). As those skilled in the art recognize, saponification is the chemical reaction in which an ester is heated with aqueous alkali such as sodium hydroxide to form an alcohol and the sodium salt of the acid corresponding to the ester. (See Hawley's Condensed Chemical Dictionary, Eleventh Edition, copy attached.) Aoyama et al. disclose that the modified ethylene-vinyl alcohol copolymer resulting from the saponification process would exhibit poor gas barrier properties and reduced thermal stability if the degree of saponification is less than 98 mol% (col. 3, lines 24-30).

It is respectfully submitted that the three references relied upon by the Examiner teach three different polymeric compositions useful as barrier layers in various constructions and that these three compositions are different from and would not suggest the composition utilized in the present invention. Appellants submit that there is no teaching or suggestion in Weeks '122 or Aoyama '296 that would render it obvious to substitute an acrylated epoxy for the cycloaliphatic epoxy utilized by Bilodeau and/or the substitution of NVP or NVC for the polyol utilized by Bilodeau. Bilodeau '363 contains neither of the two reactants utilized in the present invention, and the barrier compositions described in Weeks and Aoyama are significantly different from the compositions utilized in the present invention. The combination of an acrylated epoxy and NVP or NVC is not suggested in and would not have been obvious from a combination of the teachings of the three references relied upon by the Examiner.

VIII. CONCLUSION

For the foregoing reasons, the honorable Board is requested to reverse the Examiner's rejections of all of the claims pending in the application and to allow these claims.

If any additional fees are required for the filing of this paper, the Commissioner is authorized to charge those fees to Deposit Account #18-0988 (Docket No. AVERP3452US).

Respectfully submitted,
RENNER, OTTO, BOISSELLE & SKLAR, L.L.P.

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APPENDIX

CLAIMS SUBJECT TO APPEAL

1. A composite construction for use as a label or a tape comprising: a first substrate, said first substrate having a face side and an underside opposite said face side; an adhesive layer; and a barrier layer adhered to the underside of said first substrate and positioned between said first substrate and said adhesive layer, said barrier layer comprising a radiation cured acrylated epoxy derived from at least one acrylated epoxy oligomer and at least one reactive diluent selected from N-vinyl-2-pyrrolidone and N-vinylcaprolactam, wherein said barrier layer being substantially impervious to migratory components in said first substrate.

2. The construction of claim 1 wherein a release liner is adhered to said adhesive layer.

3. The construction of claim 2 wherein said release liner is comprised of a backing liner and a release coating adhered to one side of said backing liner, said release coating being positioned between said adhesive layer and said backing liner.

4. The construction of claim 1 wherein said composite construction is adhered to a second substrate.

5. The construction of claim 1 wherein said first substrate is comprised of a polymer film.

6. The construction of claim 1 wherein said first substrate is comprised of a polyvinyl chloride.

7. The construction of claim 1 wherein the radiation cured acrylated epoxy is derived from at least one acrylated epoxy oligomer, at least one reactive diluent selected from N-vinyl-2-pyrrolidone and N-vinylcaprolactam, and at least one photoinitiator.

8. The construction of claim 7 wherein said barrier layer is cured using ultraviolet light.

9. The construction of claim 1 wherein said barrier layer further comprises a wax, a surfactant, or a combination thereof.

10. The construction of claim 1 wherein said adhesive layer is comprised of a pressure-sensitive adhesive.

11. The construction of claim 1 wherein said adhesive layer is comprised of a acrylate or methacrylate pressure-sensitive adhesive.

12. The construction of claim 1 wherein the acrylated epoxy is derived from about 65-90% by weight of at least one acrylated epoxy oligomer, about 10-30% by weight of at least one reactive diluent selected from N-vinyl-2-pyrrolidone and N-vinylcaprolactam, and 1-10% by weight of at least one photoinitiator.

13. A composite comprising: a polyvinyl chloride substrate, having a face side and an underside opposite said face side; an adhesive layer; and a barrier layer adhered to the underside of said polyvinyl chloride substrate and positioned between said polyvinyl chloride substrate and said adhesive layer, said barrier layer comprising a radiation cured acrylated epoxy derived from at least one acrylated epoxy oligomer and at least one reactive diluent selected from N-vinyl-2-pyrrolidone and N-vinylcaprolactam, said barrier layer being substantially impervious to migratory components in said polyvinyl chloride substrate; and a release liner adhered to said adhesive layer.

14. The composite of claim 13 wherein the radiation cured acrylated epoxy is derived from at least one acrylated epoxy oligomer, at least one reactive diluent selected from N-vinyl-2-pyrrolidone and N-vinylcaprolactam, and at least one photoinitiator.

Hawley's Condensed Chemical Dictionary

ELEVENTH EDITION

Revised by

N. Irving Sax
and
Richard J. Lewis, Sr.

VAN NOSTRAND REINHOLD COMPANY
New York

saponification. The chemical reaction in which an ester is heated with aqueous alkali such as sodium hydroxide to form an alcohol (usually glycerol), and the sodium salt of the acid corresponding to the ester. The process is usually carried out on fats (glyceryl esters of fatty acids). The sodium salt formed is called a soap. A typical saponification reaction is: $(C_{17}H_{35}COO)_3C_3H_5 + 3NaOH \rightarrow 3C_{17}H_{35}COONa + C_3H_5(OH)_3$.

See also soap.

saponification number. The number of milligrams of potassium hydroxide required to hydrolyze 1 g of a sample of an ester (glyceride, fat) or mixture.

saponin. (1) A general term applied to two groups of plant glycosides that on shaking with water form colloidal solutions giving soapy lathers; they form oil/ester emulsions and are used as protective colloids. They also have the ability to hemolyze red blood corpuscles at very great dilutions. The two groups are triterpenoid and steroid saponins; the latter are used in research on sex hormones.

(2) Specific term: saponin derived from Saponaria or Quillaja.

Properties: White, amorphous glucoside; pungent, disagreeable taste and odor. It foams strongly when shaken with water; soluble in water.

Grade: Crude, purified, highest purity.

Hazard: Highly toxic by injection; destroys red blood cells. Moderately toxic by ingestion.

Use: Foam producer in fire extinguishers, detergent in textile industries, sizing, substitute for soap, emulsification agent for fats and oils.

"SAPP #4."[1] TM for a sodium acid pyrophosphate.

Grade: FCC.

Use: In leavening (has the slowest reaction rate of several phosphates which are otherwise chemically identical), in acid-type metal cleaners, oil well drilling muds, household and industrial cleaners.

sapphire. CAS: 1317-82-4. (Al_2O_3).

For natural material, see corundum. Synthetic sapphire is made by crystal-growing technique.

Properties: Hard, crystalline solid; d 3.98; Mohs hardness 9.0; mp 2040C. Dielectric strength 480 kV/cm, dielectric constant 9.0 (20C), coefficient of friction 0.05 micron, inert to strong acids and alkalies, excellent high-temperature stability, can be sealed to glass, high transmission in infrared and ultraviolet.

Forms: Rods, spheres, disks, whiskers, single crystals.

Use: Electron and microwave tubes, optical elements in radiation detectors, substrate for thin-film components and integrated circuits, abrasive, record needles, precision instrument bearings, aluminum composites, micromortars for hand-pulverizing chemicals.

See corundum.

saran. See polyvinylidene chloride, saran fiber.

saran fiber. Generic name for a manufactured fiber in which the fiber-forming substance is any long-chain synthetic polymer composed of at least 80% by weight of vinylidene chloride units ($—CH_2CCl_2—$) (Federal Trade Commission).

Properties: Tenacity, 2–2.5 g/denier, elongation 15–30%, softens at 115–137C. Highly resistant to most chemicals and solvents, to weather, moths, and mildew. Combustible, but self-extinguishing.

Use: Screens, upholstery, curtain and drapery fabrics, rugs and carpets, awnings, filter cloth.

See also polyvinylidene chloride.

sarcolysin. See melphalan.

sarcosine. (methyl glycocoll; methylaminoacetic acid). CAS: 107-97-1.

CH_3NHCH_2COOH.

Properties: Deliquescent crystals with sweet taste, mp 210–215C (decomposes), very soluble in water, slightly soluble in alcohol. Combustible.

Derivation: Decomposition of creatine or caffeine.

Grade: Technical.

Use: Synthesis of foaming antienzyme compounds for toothpaste, cosmetics, and pharmaceuticals.

sardine oil. See fish oil.

Sarett oxidation. Oxidation of primary and secondary alcohols to aldehydes and ketones by means of CrO_3-pyridine complex.

sarin. (methylphosphonofluoride acid, isopropyl ester). CAS: 107-44-8.

$[(CH_3)_2CHO](CH_3)FPO$. A nerve gas.

Hazard: Toxic by inhalation and skin absorption, cholinesterase inhibitor.

"Sarkosyl."[219] TM for a series of surface-active N-acylated sarcosines.

Use: Tooth pastes, cosmetics, and pharmaceuticals (anti-enzyme); corrosion inhibitors; lubricants and greases; inks.

See also sarcosine.

SAS. (1) Abbreviation for sodium aluminum sulfate.

See aluminum sodium sulfate.

(2) Abbreviation for sodium alkane sulfonate.